Abstract

In a first embodiment, the present invention provides computer-implemented methods for allocating resources to items are provided. Methods according to the present invention first determine one or more assignment scores for each item/resource pair by applying one or more application-specific strategies to each item/resource pair using game theory. A cost matrix is created by first summing the assignment scores for each item/resource pair and then multiplying each assignment score sum by an assignment cost associated with assignment a particular resource to a particular item. Finally, an assignment solution is found by applying the Hungarian method to the cost matrix. In a second embodiment, the present invention provides a computer-readable medium having computer-executable instructions for performing a methods of the present invention.

The present invention can be advantageously utilized to allocate or schedule a wide variety of processes or outputs competing for a resource. The present invention finds utility in a wide variety of applications. For example, the present invention can be advantageously utilized for scheduling of processes in chemical refineries and other manufacturing operations, scheduling of airline crews, supply chain management, and work flow management, distributed power management system, and decision making intelligent machines for self scheduling.

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